

ABSTRACT OF THE DISCLOSURE

A method is disclosed for dynamically creating encapsulation and decapsulation chains and segmenting the packet-forwarding plane. A distributed router may comprise multiple cards, each exposing a subset of the router's physical interfaces. Some physical interfaces may be configured to send/receive only certain types and destinations of data packets. Some cards might not expose any physical interfaces configured to send/receive a particular type and destination of packet, making encapsulation and/or decapsulation chains for virtual interfaces that process data packets of the particular type useless on those cards. Therefore, instead of always creating both encapsulation and decapsulation chains for a virtual interface on a card, an aspect of the method dynamically determines which of the encapsulation and decapsulation chains are useful for a virtual interface on that card, and creates only those chains that are useful on that card. Thus, the packet-forwarding plane is segmented into independent encapsulation and decapsulation segments.